

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): An integrated digital x-ray imaging system for dental radiography, comprising:

an x-ray source;

a source control unit operably connected to the x-ray source which controls the operation of the x-ray source and the exposure settings of the x-ray source;

a control panel coupled to the source control unit which provides the exposure settings to the source control unit;

an image sensor positioned for receiving x-ray radiation from the x-ray source passed through a patient, and for delivering an analog output x-ray image of the patient;

a sensor ~~driver/processor~~ driver coupled to the image sensor receiving the analog output x-ray image from the image sensor, ~~wherein the sensor processor interfaces with the source control unit for receiving the exposure settings of the x-ray source;~~

an image processor coupled to the sensor driver for converting the analog output x-ray image received from the image sensor to a digital format image and for processing the digital format image, wherein the image processor interfaces with the source control unit for receiving the exposure settings of the x-ray source; and

a display for presenting the digital format image.

Claim 2 (original): The digital x-ray imaging system of claim 1 wherein the exposure settings comprise pre-determined x-ray exposure times based on the category of tooth and the physical size of the patient.

Claim 3 (original): The digital x-ray imaging system of claim 2 further comprising a calibrator for calculating the exposure settings based on certain anatomical parameters of the patient.

Claim 4 (original): The digital x-ray imaging system of claim 3 wherein the anatomical parameters used for calculating exposure times are based on the category of tooth and the physical size of the patient.

Claim 5 (original): The digital x-ray imaging system of claim 4 wherein the image sensor is a CCD or CMOS x-ray image detector.

Claim 6 (currently amended): The digital x-ray imaging system of claim 5 wherein the display ~~comprises~~ is a personal computer monitor, a flat panel display, or a television.

Claim 7 (currently amended): The digital x-ray imaging system of claim 6 wherein an additional display is ~~supplied on~~ coupled to the ~~sensor~~ image processor.

Claim 8 (currently amended): The digital x-ray imaging system of claim 7 wherein the display ~~supplied~~ is a flat panel display located on the control panel.

Claim 9 (currently amended): The digital x-ray imaging system of claim 8 wherein the control panel ~~comprises~~ is a portable PDA-type device.

Claim 10 (currently amended): The digital x-ray imaging system of claim 9 wherein the image processor comprises digital detection software supplied with the ~~sensor~~ image processor.

Claim 11 (currently amended): An integrated digital x-ray imaging system for dental radiography, comprising:

an x-ray source;

a source control unit operably connected to the x-ray source which controls the operation of the x-ray source and signals pre-determined x-ray exposure times based on the category of tooth and the physical size of the a patient and displays ~~the a~~ an x-ray image;

a control panel coupled to the source control unit which provides exposure settings to the source control unit and comprises a PDA-type device with a flat panel display;

a CCD image sensor positioned to receive x-ray radiation from the x-ray source passed through a the patient, and for delivering an analog output x-ray image of the patient;

a sensor ~~processor~~ driver coupled to the image sensor receiving the analog output x-ray image from the image sensor, ~~wherein the sensor processor interfaces with the source control unit for receiving the exposure settings of the x-ray source;~~

a calibrator capable of calculating the exposure settings based on the category of tooth and the physical size of the patient;

an image processor ~~supplied with~~ coupled to the sensor ~~processor~~ driver and the control panel for converting the analog output x-ray image received from the image sensor to a digital format image and for processing the digital format image, wherein the image processor interfaces with the source control unit for receiving the exposure settings of the x-ray source; and

a display unit for presenting the digital format image.

Claim 12 (currently amended): A method for performing dental radiography on a patient, the method comprising the steps of:

arranging an x-ray source in a desired location, in relation to the mouth of the patient to be irradiated; and opposite an image sensor;

activating the x-ray source and the image sensor in a coordinated manner, so as to avoid pre-integration of charge in the image sensor, and at the same time reduce risk of over-exposure; and

coupling a sensor driver and an image processor to the image sensor for receiving an analog output x-ray image from the image sensor and converting the analog output x-ray image to a digitally formatted x-ray image, wherein the image processor interfaces with a source control unit for receiving exposure settings from the x-ray source; and

receiving at the control panel a the digitally formatted x-ray image from the image sensor processor at a control panel.

Claim 13 (currently amended): A The method as recited in claim 12, further comprising the steps of viewing the x-ray image from the control panel;

manipulating the x-ray image to provide a diagnosis quality image; and
storing the x-ray image.

Claim 14 (currently amended): A The method as recited in claim 13 further comprising the step of measuring the an exposure rate and calculating the a dosage for each of multiple x-ray pictures or series.

Claim 15 (currently amended): A method for performing dental radiography on a patient, the method comprising the steps of:

placing the patient in ~~the~~ a dental chair, and arranging an x-ray source in a desired location, in relation to the mouth to be irradiated, and opposite an image sensor;

activating the x-ray source;

coupling a sensor driver and an image processor to the image sensor for receiving an analog output x-ray image from the image sensor and converting the analog output x-ray image to a digitally formatted x-ray image, wherein the image processor interfaces with a source control unit for receiving exposure settings from the x-ray source;

receiving ~~at the control panel a~~ the digitally formatted x-ray image from the image sensor processor at a control panel;

viewing the x-ray image from the control panel;

manipulating the x-ray image to provide a diagnosis quality image;

storing the x-ray image; and

measuring ~~the~~ an exposure rate and calculating ~~the~~ a dosage for each of multiple x-ray pictures or series.

Claim 16 (currently amended): The method of claim 15 further comprising the step of providing the control panel in a remote area, and wherein the control panel is a portable PDA-type x-ray control panel supplied with a flat panel digital display and image manipulation software.

Claim 17 (currently amended): The method of claim 16 further comprising the step of removing the control panel from its station to a different area of ~~the~~ a dental office.

Claim 18 (currently amended): The method of claim 16 wherein the step of activating the x-ray source is accomplished by pressing an exposure button located on the control panel.

Claim 19 (currently amended): The method of claim 15 wherein the x-ray image ~~may be~~ is manipulated for contrast, clarity, brightness, resolution, and accuracy.

Claim 20 (currently amended): The method of claim 16 wherein the x-ray image ~~may be~~ is sent via a network connection to a storage database.